



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Lorin R. DeBonte et al.                      Art Unit : 1638  
Serial No. : 10/757,909                                      Examiner : Unknown  
Filed : January 15, 2004  
Title : FATTY ACID DESATURASES AND MUTANT SEQUENCES THEREOF

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

TRANSMITTAL

The following correspondence relating to this application is enclosed for filing:

1. Information Disclosure Statement (1 page);
2. Form PTO-1449 (4 pages);
3. Copies of cited references (7 references); and
4. A Return Postcard.

Please date stamp and return the enclosed postcard. Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date:

August 13, 2004

A handwritten signature in black ink, appearing to read "M. Angela Parsons".

M. Angela Parsons Ph.D.  
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Lisa M. Becker

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INFORMATION DISCLOSURE STATEMENT

Applicants submit the references listed on the attached form PTO-1449.

Under 35 USC §120, this application relies on the earlier filing date of U.S. Application Nos. 08/874,109 and 08/572,027, filed on June 12, 1997 and December 14, 1995, respectively.

The references were submitted to and/or cited by the Office in the prior applications and, therefore, are not provided in this application with the exception of the references designated AN, AO, AQ, ANN, ATT, ANNN, and ARRR, copies of which are being provided.

This statement is being filed before the receipt of a first Office Action on the merits.

Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: August 13, 2004

M. Angela Parsons  
M. Angela Parsons Ph.D.  
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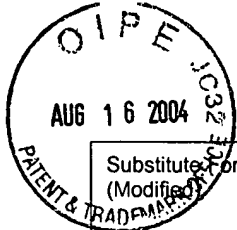
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Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 07148-063004	Application No. 10/757,909
<b>Information Disclosure Statement by Applicant</b> (Use several sheets if necessary)  (37 CFR §1.98(b))		Applicant Lorin R. DeBonte et al.	
		Filing Date January 15, 2004	Group Art Unit 1638

**U.S. Patent Documents**

Examiner Initial	Desig. ID	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date If Appropriate
	AA	4,627,192	12/09/86	Fick			
	AB	4,948,811	08/14/90	Spinner et al.			
	AC	5,387,758	02/07/95	Wong et al.			
	AD	5,434,283	07/18/95	Wong et al.			
	AE	5,545,821	08/13/96	Wong et al.			
	AF	5,625,130	04/29/97	Grant et al.			
	AG	5,859,350	01/12/99	DeBonte et al.			
	AH	6,372,965	04/16/02	Lightner et al.			

**Foreign Patent Documents or Published Foreign Patent Applications**

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
	AI	EP 323 753	07/12/89	EPO				
	AJ	WO 91/15578	10/17/91	PCT				
	AK	WO 92/03919	03/19/92	PCT				
	AL	WO 93/11245	06/10/93	PCT				
	AM	WO 94/11516	05/26/94	PCT				
	AN	WO 97/21340	06/19/97	PCT				
	AO	CA 2 180 386	01/04/98	Canada				

**Other Documents (include Author, Title, Date, and Place of Publication)**

Examiner Initial	Desig. ID	Document
	AP	GenBank Accession No. U50771
	AQ	GenBank Accession No. X91139
	AR	Arondel et al., "Map-Based Cloning of a Gene Controlling Omega-3 Fatty Acid Desaturation in <i>Arabidopsis</i> ," <i>Science</i> , 1992, 258:1153-1155
	AS	BRL Catalog and Reference Guide, "Sequencing Primers," page 61
	AT	Brunklaus-Jung and Robbelen, "Genetical and Physiological Investigations on Mutants for Polyenoic Fatty Acids in Rapeseed ( <i>Brassica napus</i> L.). III. Breeding Behaviour and Performance," <i>Plant Breeding</i> , 1987, 98:9-16

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

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	AU	Canvin, "The Effect of Temperature on the Oil Content and Fatty Acid Composition of the Oils from Several Oil Seed Crops," <u>Can. J. Botany</u> , 1965, 43:63-69
	AV	Classen et al., Oral Presentation, GCIRC 8 <sup>th</sup> International Rapeseed Congress, Saskatoon, Saskatchewan, July 9-11, 1991, pp. 390-395
	AW	Connor et al., "The Dietary Prevention and Treatment of Coronary Heart Disease," <u>Coronary Heart Disease: Prevention, Complications and Treatment</u> , 1985, pp. 43-64
	AX	Craig, "Varietal and Environmental Effects on Rapeseed. III. Fatty Acid Composition of 1958 Varietal Tests," <u>Can. J. Plant Science</u> , 1961, 41:204-210
	AY	Downey et al., "Methods of Breeding for Oil Quality in Rape," <u>Can. J. Plant Science</u> , 1963, 43:271-275
	AZ	Evans et al., "Edible Oil Evaluation by Room Odor Tests: A Preliminary Report," <u>JAOCs</u> , 1971, 48:711-714
	AAA	Fox et al., <u>Proc. Natl. Acad. Sci. USA</u> , 1993, 90:2486-2490
	ABB	Galliard, "Degradation of Acyl Lipids: Hydrolytic and Oxidative Enzymes," <u>The Biochemistry of Plants</u> , 1980, 4:85-116
	ACC	Garg et al., <u>New England J. Med.</u> , 1988, 319:829-834
	ADD	Gaul, "Mutations in Plant Breeding," <u>Radiation Botany</u> , 1964, 4:155-232
	AEE	Grundy, <u>New England J. Med.</u> , 1986, 314:745-748
	AFF	Hawrysh, "Stability of Canola Oil," <u>Canola and Rapeseed Production, Chemistry, Nutrition and Processing Technology</u> , 1990, Chapter 7, pp. 99-122
	AGG	Hitz et al., <u>Plant Physiol.</u> , 1994, 103:635-641
	AHH	Hoffman et al., "Anther Culture as a Breeding Tool in Rape. II. Progeny Analyses of Androgenetic Lines and Induced Mutants from Haploid Cultures," <u>Theor. Appl. Genet.</u> , 1982, 61:225-232
	AII	Jönsson et al., "Quality breeding in rapeseed," <u>Svalöv 1886-1986 Research and Results in Plant Breeding</u> , Gösta Olsson (ed.), LTs forlag, Stockholm, pp. 173-184
	AJJ	Keys (ed.), <u>Circulation</u> , Vol. XLI, Suppl. I, 1970, pp. I162-I183
	AKK	Kirk-Othmer, <u>Encyclopedia of Chemical Technol.</u> , 3 <sup>rd</sup> ed., 1980, 9:795-831
	ALL	Kondra et al., "Selection for Oleic, Linoleic and Linolenic Acid Content in F2 Populations of Rapeseed," <u>Can. J. Plant Sci.</u> , 1976, 56:961-966
	AMM	Koseoglu et al., "Development of Low Glucosinolate Mustard," <u>Canola and Rapeseed: Production, Chemistry, Nutrition, and Processing Technology</u> , "Hydrogenation of Canola Oil," 1990, Chapter 8, pp. 123-148
	ANN	Lim et al., "Expressed sequence tags of Chinese cabbage flower bud cDNA," <u>Plant Physiol.</u> , 1996, 111:577-588
	AOO	Lindqvist et al., <u>EMBO J.</u> , 1996, 15:4081-4092
	APP	Mattson, "A changing role for dietary monounsaturated fatty acids," <u>J. Am. Diet. Assoc.</u> , 1989, 89:387-391

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	AQQ	Mensink et al., "Effect of a Diet Enriched with Monounsaturated or Polyunsaturated Fatty Acids on Levels of Low-Density and High-Density Lipoprotein Cholesterol in Healthy Women and Men," <u>New England J. Med.</u> , 1989, 321:436-441
	ARR	Mensink et al., "Effect of Dietary Trans Fatty Acids on High-Density and Low-Density Lipoprotein Cholesterol Levels in Healthy Subjects," <u>New England J. Med.</u> , 1990, 323:439-445
	ASS	Neidleman, "Temperature Effects in the Biosynthesis of Unique Fats and Fatty Acids," <u>Proc. of the World Conf. On Biotech. Fats Oils Ind.</u> , 1988
	ATT	Newman et al., "Genes Galore: A Summary of Methods for Accessing Results from Large-Scale Partial Sequencing of Anonymous <i>Arabidopsis</i> cDNA Clones," <u>Plant Physiol.</u> , 1994, 106:1241-1255
	AUU	Okuley et al., <u>Plant Cell</u> , 1994, 6:147-158
	AVV	Paul et al., "Inheritance of S-methyl-L-cysteine sulfoxide and thiocyanate contents in forage rape ( <i>Brassica napus</i> L.)," <u>Theor. Appl. Genet.</u> , 1986, 72:706-709
	AWW	Pleines and Friedt, "Breeding for Improved C18-Fatty Acid Composition in Rapeseed ( <i>Brassica napus</i> L.)," <u>Fat Sci. Technol.</u> , 1988, 90(5):167-171
	AXX	Pleines et al., Abstract of the 43 <sup>rd</sup> Lecture Meeting of Deutsche Gesellschaft für Fettwissenschaft in Hamburg, September 30-October 1, 1987
	AYY	Pleines et al., "Recurrent Selection for Modified Polyenoic Fatty Acid Composition in Rapeseed ( <i>Brassica napus</i> L.)," Abstract of The Proceedings of the 7 <sup>th</sup> International Rapeseed Congress, Poznan, Poland, May 11-14, 1987
	AZZ	Rakow and McGregor, "Opportunities and Problems in Modification of Levels of Rapeseed C <sub>18</sub> Unsaturated Fatty Acids," <u>J. Amer. Oil Chem. Soc.</u> , 1973, 50:400-403
	AAAA	Rakow, "Selection for Linoleic and Linolenic Acid Content in Rape Seed after Mutagenic Treatment," <u>Z. Pflanzenzüchtg.</u> , 1973, 69:62-82
	ABBB	Ram et al., "Biotechnology for <i>Brassica</i> and <i>Helianthus</i> improvement," <u>Proceedings World Conference on Biotechnology for the Fats and Oils Industry</u> , Sept. 27-Oct. 2, 1987
	ACCC	Rennie et al., "Fatty Acid Composition of Oil from Soybean Seeds Grown at Extreme Temperatures," <u>JAOCS</u> , 1989, 66:1622-1624
	ADDD	Röbbelen et al., "Genetical and Physiological Investigations on Mutants for Polyenoic Fatty Acids in Rapeseed, <i>Brassica napus</i> L.," <u>Z. Pflanzenzüchtg.</u> , 1975, 75:93-105
	AEEE	Röbbelen and Rakow, "Selection for Fatty Acids in Rapeseed," <u>Proceedings of the International Conference on the Scientific, Technology and Marketing of Rapeseed and Rapeseed Products</u> , September 20-23, 1970
	AFFF	Röbbelen, "Changes and Limitations of Breeding for Improved Polyenoic Fatty Acids Content in Rapeseed," <u>Biotechnology for the Oils and Fats Industry</u> , 1984, American Oil Chemists Society, 97-105
	AGGG	Roy and Tarr, "IXLIN – an Interspecific Source for High Linoleic and Low Linolenic Acid Content in Rapeseed ( <i>Brassica napus</i> L.)," <u>Z. Pflanzenzüchtg.</u> , 1985, 95:201-209
	AHHH	Roy and Tarr, "Prospects for the Development of Rapeseed ( <i>B. napus</i> L.) with Improved Linoleic and Linolenic Acid Content," <u>Plant Breeding</u> , 1987, 98:89-96
	AIII	Scarth et al., "Stellar Low Linolenic – High Linoleic Acid Summer Rape," <u>Can. J. Plant Sci.</u> , 1988, 68:509-511

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	AJJJ	Shanklin et al., "Eight Histidine Residues Are Catalytically Essential in a Membrane-Associated Iron Enzyme, Stearoyl-CoA Desaturase, and Are Conserved in Alkane Hydroxylase and Xylene Monooxygenase," <u>Biochemistry</u> , 1994, 33:12787-12794
	AKKK	Shpota, "Rape and Mustard Breeding for Oil Quality," <u>Proceedings of the 7<sup>th</sup> International Rapeseed Congress</u> , May 11-14, 1987, 2:560-565
	ALLL	Stefansson et al., "Tower Summer Rape," <u>Can. J. Plant Sci.</u> , 1975, 55:343-344
	AMMM	Stefansson, "The Development of Improved Rapeseed Cultivars," <u>High and Low Erucic Acid Rapeseed Oils</u> , Academic Press Inc., 1983, pp. 143-159
	ANNN	Tanhuanpää et al., "Mapping and cloning of <i>FAD2</i> gene to develop allele-specific PCR for oleic acid in spring turnip rape ( <i>Brassica rapa</i> ssp. <i>oleifera</i> )," <u>Molecular Breeding</u> , 1998, 4:543-550
	AOOO	Töpfer et al., "Modification of Plant Lipid Synthesis," <u>Science</u> , 1995, 268:681-686
	APPP	Tremolieres et al., "Unsaturated Fatty Acids in Maturing Seeds of Sunflower and Rape: Regulation by Temperature and Light Intensity," <u>Phytochemistry</u> , 1982, 21(1), 41-45
	AQQQ	Ullrich et al., "Identification of the Most Intense Odor Compounds Formed During Autoxidation of Methyl Linolenate at Room Temperature," <u>JAOCs</u> , 1988, 65:1313-1317
	ARRR	Wada et al., "Enhancement of chilling tolerance of a cyanobacterium by genetic manipulation of fatty acid desaturation," <u>Nature</u> , 1990, 347:200-203
	ASSS	Western Canada Canola Rapeseed Recommendations Committee 1990 Cooperative Trial Date
	ATTT	"www.brassica.info sharing information world-wide for The Multinational Brassica Genome Project, at <a href="http://www.brassica.info/information/GenomeSize.htm">http://www.brassica.info/information/GenomeSize.htm</a> , printed 3/14/03
	AUUU	Williams et al., "Associations of Dietary Fat, Regional Adiposity, and Blood Pressure in Men," <u>J. Am. Med. Assoc.</u> , 1987, 257:3251-3256
	AVVV	Yadav et al., <u>Plant Physiol.</u> , 1993, 103:467-476

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